Consumption Booms, the Real Exchange Rate Appreciation, and the Trade Balance Deterioration: the Role of the World Real Interest Rate*

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ABSTRACT

Many developing countries in East Asia and Latin America shared similar macroeconomic experiences in the early 1990s as pointed by Calvo *et al*. (1994). Among the macroeconomic experiences, this paper theoretically studies a consumption boom, an inflationary pressure, the trade balance deterioration, and the real exchange rate appreciation. The analysis shows that a temporary decrease in the world real interest rate causes these macroeconomic phenomena under a predetermined exchange rate regime. It is also shown that even under a flexible exchange rate regime a temporary decrease in the world real interest rate has real effects on an economy.

1 Introduction

As known well, emerging markets in East Asia and Latin America enjoyed economic booms in the early 1990s. Especially, the rapid growth in East Asia, so-called "the East Asian miracle," attracted a great interest among analysts.[(1)] Economic busts following the economic booms have also attracted as much at-

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(1) See, for example, World Bank (1993, pp.1–78).

tention as the booms. The economic busts in the emerging markets that were often accompanied by balance of payments crises have surprised many economists and policy makers.[2]

It has been argued that these economic booms and busts in emerging markets in the 1990s were related to a dramatic surge of capital inflows from industrial countries such as the United States and Japan, to developing regions such as Latin America and East Asia (World Bank, 1997). These capital inflows were often associated with an inflationary pressure, the real exchange rate appreciation, and the current account deterioration, as pointed by Calvo *et al.* (1994). In addition to these stylized facts by Calvo *et al.* (1994), the trade balance deterioration was also observed (Figure A). As for the cause of this surge in capital inflows, Frankel and Okongwu (1996) found that low interest rates prevailing in the United States had the most significant effect on the capital inflows, in an analysis of the determinants of portfolio capital flows in six Latin American and East Asian countries (Argentina, Chile, Korea, Mexico, the Philippines, and Taiwan) using quarterly data covering the period 1987-1994.[3]

This paper's purpose is to give a theoretical explanation for (a) the initial increase in consumption followed by a latter contraction (Figure B), (b) the trade balance deterioration (Figure A), (c) the real exchange rate appreciation (Figure C), and (d) inflation pressures (Figure E) in the emerging markets. The paper shows how the behavior of these economic variables is caused by a temporary decrease in the world real interest rate.[4]

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(2) For example, Krugman (1994) was skeptical of the Asian economic miracle and argued that the high growth rate of emerging economies in East Asia would not be sustainable in the long run. However, even he says that "what we have seen is something both more complex and more drastic" (Krugman, 1998).

(3) In their empirical research, Dooley *et al.* (1994) and Fernández-Arias (1996) also reached the similar conclusion that changes in external interest rates were the dominant factor in surges in the capital inflows to developing countries.

The theoretical analysis is given separately under predetermined exchange rates and flexible exchange rates. It shows that under predetermined exchange rates, the low world real interest rate triggers the consumption boom (and bust), an inflationary pressure, the trade balance deterioration, and the real exchange rate appreciation. It is also shown that under flexible exchange rates as well as under predetermined exchange rate regimes, the low world real interest rate causes real effects, i.e., (a), (b), and (c).

In other words, a flexible exchange rate regime fails to prevent the real external shock from affecting the domestic economy. The monetary effects of the world real interest rate shock under a predetermined exchange rate regime and those under a flexible exchange rate regime are different, since the domestic inflation rate absorbs the shock in the former case while the nominal exchange rate absorbs it in the latter case.

The paper proceeds as follows. Section 2 presents the model. Section 3 analyzes the effect of a temporary decrease in the world real interest rate on consumption, the domestic inflation rate, the trade balance, and the real exchange rate under predetermined exchange rates. Section 4 considers the case under flexible exchange rates. Section 5 summarizes the main results of our analysis.

2 The Model

2.1 The basic framework

Consider a small open economy perfectly integrated with the rest of the world in goods and capital markets. Free movement of the good implies that the law of one price holds, namely $P_t = E_t P_t^*$, where E_t, P_t, and P_t^* denote the nominal exchange rate, the domestic price level of tradable goods, and the foreign price

(4) Figure D shows the behavior of the US and Japan real interest rates.

level of tradable goods at time t, respectively. There are two assets available to consumers in this economy: domestic currency, M_t, and internationally traded asset holdings, B_t. Real money balances are denoted by $m_t\left(\equiv \frac{M_t}{P_t} = \frac{M_t}{E_t P_t^*}\right)$. Real private foreign asset holdings are denoted by $b_t\left(\equiv \frac{B_t}{P_t^*}\right)$. Financial wealth of consumers in terms of tradable goods is denoted by a_t:

$$a_t = m_t + b_t. \tag{1}$$

The representative household's instantaneous utility depends (separably) on consumption of tradables, c_t^T, and non-tradables (or home goods), c_t^N. Thus, the lifetime utility as of the time 0 can be written as:

$$\int_0^\infty \{\ln(c_t^T) + \ln(c_t^N)\} e^{-\beta t} dt, \tag{2}$$

where $\beta(>0)$ is the rate of time preference.

The flow budget constraint of the representative consumer is given by

$$\dot{a}_t = r_t a_t + y^T + \frac{y^N}{e_t} + \tau_t - c_t^T - \frac{c_t^T}{e_t} - i_t m_t. \tag{3}$$

r_t is the real rate of return on the foreign asset. In other words, r_t is the world real interest rate for this small open economy. The individual has a constant endowment flow of tradable goods, y^T, and non-tradable goods, y^N. τ_t denotes government lump-sum transfers. i_t denotes domestic nominal interest rates. e_t denotes the real exchange rate, which is the relative price of tradable goods in terms of non-tradable goods, i.e., $e_t = \left(\frac{P_t}{P_t^N}\right) = \left(\frac{E_t P_t^*}{P_t^N}\right)$. Therefore, a reduction in e_t indicates an appreciation of the real exchange rate. i_t is the domestic nominal interest rate. The term $i_t m_t$ indicates an inflation tax.

Perfect capital mobility implies that the interest parity condition holds:

$$i_t = r_t + \varepsilon_t + \overline{\pi^*}, \tag{4}$$

where ε_t is the rate of devaluation (or depreciation) $\left(i.e., \varepsilon_t \equiv \frac{\dot{E}_t}{E_t}\right)$ and $\overline{\pi^*}$ is the (constant) rate of foreign inflation $\left(i.e., \pi_t^* \equiv \frac{\dot{P}_t^*}{P_t^*}\right)$.

Following Calvo (1986), we assume that transactions require holding cash in advance.(5)

$$\alpha\left(c_t^T+\frac{c_t^N}{e_t}\right)=m_t, \qquad \alpha>0, \tag{5}$$

where α is a constant.

From the consumer's flow budget constraint (3) and the transversality condition (*i.e.*, $\lim_{t\to\infty} a_t e^{-rt}=0$), the individual's lifetime budget constraint is given by

$$a_0+\int_0^\infty\left(y^T+\frac{y^N}{e_t}+\tau_t\right)e^{-r_t t}dt=\int_0^\infty\left(c_t^T+\frac{c_t^N}{e_t}+i_t m_t\right)e^{-r_t t}dt. \tag{6}$$

The government's flow budget constraint is given by

$$\dot{h}_t=r_t h_t+\dot{m}_t+(\varepsilon_t+\overline{\pi^*})m_t-\tau_t, \tag{7}$$

where h_t denotes the stock of foreign assets held by the government (i.e., in ternational reserves). The terms of $\dot{m}_t$ and $(\varepsilon_t+\overline{\pi^*})m_t$ indicate the government's revenues from money creation. The government's lifetime budget constraint is also given by

$$\int_0^\infty \tau_t e^{-r_t t}dt=h_0+\int_0^\infty(\dot{m}_t+\varepsilon_t m_t+\overline{\pi^*}m_t)e^{-r_t t}dt. \tag{8}$$

This government's lifetime budget constraint indicates that the present value of transfers must equal the initial stock of international reserves, denoted by h_0, and revenues from money creation.

From the consumer's flow budget constraint (3), the interest parity condition

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(5) The derivation of the cash-in-advance constraint is the following (Feenstra, 1985). Let

$$F(\alpha)\equiv\int_t^{t+\alpha}\left(c_t^T+\frac{c_t^N}{e_t}\right)ds.$$

Differentiating it with respect to α, we obtain

$$F'(\alpha)=c_{t+\alpha}^T+\frac{c_{t+\alpha}^N}{e_{t+\alpha}}.$$

Using Taylor expansion, we also have

$$F(\alpha)=F(\alpha^*)+F'(\alpha^*)(\alpha-\alpha^*).$$

It follows that

$$F'(0)=c_t^T+\frac{c_t^N}{e_t},$$

and

$$F(0)=0.$$

Approximating $F(\alpha)$ around zero, we obtain

$$F(\alpha)=\alpha\left(c_t^T+\frac{c_t^N}{e_t}\right).$$

(4), the equilibrium condition of the non-tradable goods market ($i.e.,c_t^N = y^N$), and the government flow budget constraint (7), this economy's current account can be obtained as

$$\dot{k}_t = r_t k_t + y^T - c_t^T \equiv r_t k_t + TB_t, \tag{9}$$

where $k_t (\equiv b_t + h_t)$ is the economy's net stock of foreign assets, and TB_t is the economy's trade balance:

$$TB_t \equiv y^T - c_t^T. \tag{10}$$

Combining (6) and (8), and taking into account non-tradable goods market equilibrium ($i.e.,c_t^N = y^N$), the interest parity condition (4), and the transversality condition ($\lim_{t\to\infty} k_t e^{-r_t t} = 0$), yield the economy's resource constraint

$$k_0 + \int_0^\infty y^T e^{-r_t t} = \int_0^\infty c_t^T e^{-r_t t} dt. \tag{11}$$

Equation (11), therefore, constrains this small open economy's lifetime consumption of tradable goods to be equal to tradable goods wealth. Reflecting the reality of most developing countries in East Asia and Latin America, we assume that an economy is a debtor country in the initial steady state. That is, k_0 is assumed to be at most zero ($i.e.,k_0 \leq 0$).

Maximizing the lifetime utility (2) subject to the budget constraint (3) and the cash-in-advance constraint (5) yields the following first-order conditions:(6)

$$\frac{1}{c_t^N} = \lambda_t (1 + \alpha i_t), \tag{13}$$

$$\frac{1}{c_t^N} = \frac{1}{e_t} \lambda_t (1 + \alpha i_t), \tag{14}$$

and

$$\dot{\lambda}_t = \lambda_t (\beta - r_t), \tag{15}$$

where λ_t is the co-state variable. In other words, λ_t indicates the shadow price

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(6) We use the standard optimal control technique of setting up the current value Hamiltonian:

$$H_c = \ln c_t^N + \ln c_t^T + \lambda_t \{ r_t a_t + y^T + \frac{y^N}{e_t} + \tau_t + (1 + \alpha i_t) \left(c_t^T + \frac{c_t^N}{e_t} \right) \}. \tag{12}$$

of wealth. Therefore, if the subjective discount rate β is larger than the world real interest rate r_t, the shadow price of wealth must increase (and vice versa). Equations (13) and (14) are conditions whereby the household equates the marginal utility of consumption to an effective price of consumption. The effective price of consumption consists of the two parts: the usual market price and the opportunity cost of holding real money balances to purchase the goods.

From Equations (13) and (14) and the non-tradable goods market equilibrium (*i.e.*, $c_t^N = y^N$), it follows that

$$e_t = \frac{c_t^N}{c_t^T} = \frac{y^N}{c_t^T}. \tag{16}$$

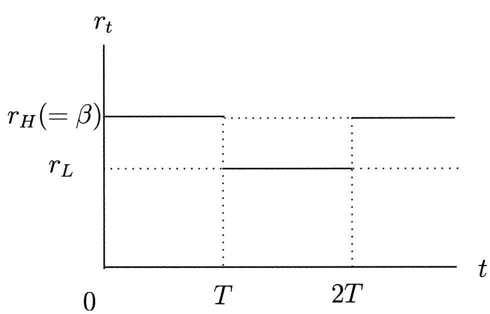
2.2 A temporary decrease in the world real interest rate

Suppose that the world real interest rate is expected to remain constant forever in the initial steady state. It is assumed that at time 0 consumers know the following changes in the world real interest rate:

$$r_t = \begin{cases} r_H(=\beta) & \text{if } t < T, \\ r_L & \text{if } T \leq t < 2T, \\ r_H(=\beta) & \text{if } 2T < t, \end{cases}$$

as illustrated in Figure 1. That is, we consider an anticipated and temporary decrease in the world real interest rate.

Figure 1: The world real interest rate

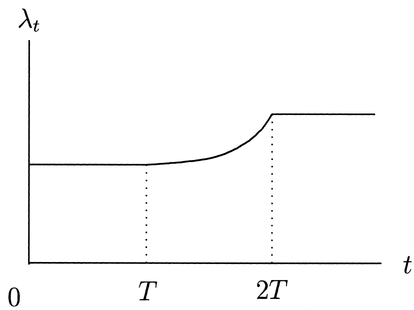


It follows from a first-order condition (15) that

$$\dot{\lambda}_t = \begin{cases} 0 & \text{if } 0 \leq t < T, \\ \lambda_t(\beta - r_L) > 0 & \text{if } T \leq t < 2T, \\ 0 & \text{if } 2T \leq t, \end{cases} \tag{17}$$

Figure 2 illustrates the behavior of the costate variable λ_t.(7) In the following

Figure 2:



sections, we use this equilibrium time-path of the costate variable λ_t to obtain those of other endogenous variables.

3 Predetermined Exchange Rates

In the case of predetermined exchange rates, policy makers set a path of the nominal exchange rate. That is, policy makers set an initial value of nominal exchange rates (E_0) and a devaluation rate (ε_t). It is assumed that the rate of devaluation is set at a constant level $\bar{\varepsilon}$.(8)

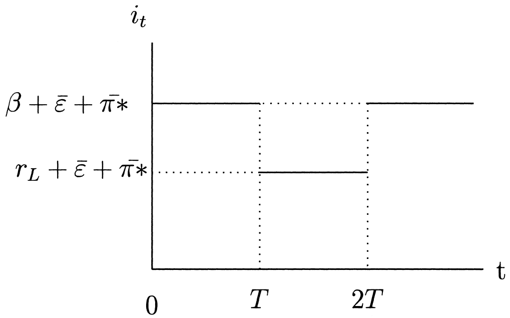
Since the devaluation rate is constant under predetermined exchange rates,

(7) It should be noted that λ_t does not jump after time 0 in an anticipated way along a perfect foresight equilibrium path.

(8) The particular case of $\bar{\varepsilon} = 0$ would be a system of fixed exchange rates.

the interest parity condition (4) implies that consumers expect that the nominal interest rate i_t is low between T and $2T$ as illustrated in Figure 3.

Figure 3: the nominal interest rate

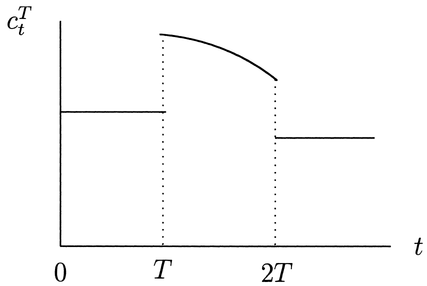


It follows from a first-order condition (13) that the optimum level of tradables consumption in each of the time intervals satisfies the following conditions:

$$\frac{1}{c_t^T} = \begin{cases} \lambda_t\{1+\alpha(\beta+\overline{\pi^*}+\bar{\varepsilon})\} & \text{if } 0 \leq t < T, \\ \lambda_t\{1+\alpha(r_L+\overline{\pi^*}+\bar{\varepsilon})\} & \text{if } T \leq t < 2T, \\ \lambda_t\{1+\alpha(\beta+\overline{\pi^*}+\bar{\varepsilon})\} & \text{if } 2T \leq t. \end{cases}$$

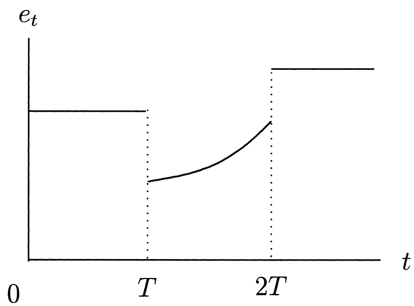
Given the time paths of λ_t and i_t, the above conditions yield the optimum path of tradables consumption c_t^T. This optimum consumption path is illustrated in Figure 4. Intuitively, since a consumer expects that tradable goods are cheaper between T and $2T$ than after $2T$ or before T, she/he substitutes consumption away from the time-intervals after $2T$ or before T (when consumption is expected to be relatively expensive) towards the time-interval between T and $2T$ (when consumption is cheaper). The downward path of the tradable goods consumption between T and $2T$ is due to the fact that the real interest rate is smaller than the consumer's subjective discount rate.

Figure 4: Consumption of tradable goods



It follows from Equation (16) that this time path of tradables consumption gives that of real exchange rate as illustrated in Figure 5. While the supply of tradable goods is perfectly elastic, the supply of non-tradable goods is fixed. Hence, the excess demand for non-tradable goods between T and $2T$ must be met by a rise in the relative price (i.e., a fall in the real exchange rate).

Figure 5: The real exchange rate



By the definition of trade balance (10), the time path of tradables consumption also gives that of the trade balance as illustrated in Figure 6.

The time path of real money balances is given by Equations (5) and (16) (Figure 7). Intuitively, the low interest rate between T and $2T$ decreases the opportunity cost and then causes consumers to hold more money.

Figure 6: The trade balance

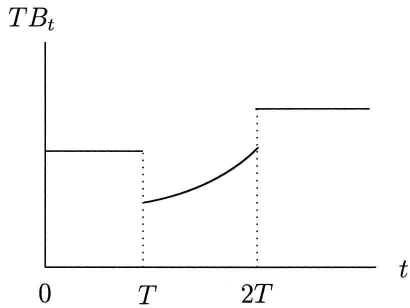
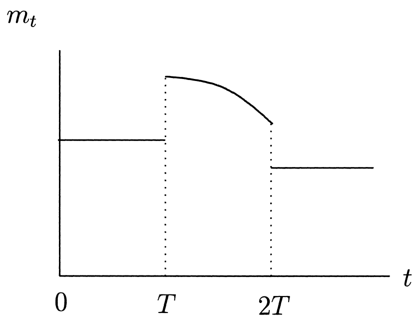


Figure 7: Real money balances



Since by definition the real exchange rate is

$$e_t = \frac{E_t P_t^*}{P_t^N}, \tag{18}$$

we obtain

$$\dot{e}_t = e_t(\varepsilon_t + \overline{\pi^*} - \pi_t), \tag{19}$$

where π_t is the rate of inflation of non-tradable goods. Thus, under predetermined exchange rates, it follows that

$$\pi_t = -\frac{\dot{e}_t}{e_t} + \bar{\varepsilon} + \overline{\pi^*}. \tag{20}$$

Furthermore, differentiating (16) with respect to time gives

$$-\frac{\dot{e}_t}{e_t} = \frac{\dot{c}_t^T}{\dot{c}_t^T} \tag{21}$$

Thus, we have

$$\pi_t = \frac{\dot{c}_t^T}{c_t^T} + \bar{\varepsilon} + \overline{\pi^*}. \tag{22}$$

Therefore, the time path of c_t^T and Equation (22) yield the time path of π_t as illustrated in Figure 8 or Figure 9. Figure 8 illustrates the case where $\pi_s > 0$ $(T < s < 2T)$. This is the case where $r_L - \beta + \bar{\varepsilon} + \overline{\pi^*} > 0$. On the other hand, Figure 9 illustrates the case where $\pi_s < 0 (T < s < 2T)$. This occurs if $r_L - \beta + \bar{\varepsilon} + \overline{\pi^*} < 0$.

Under predetermined exchange rates, E_t in Equation (18) does not jump. By assumption, P_t^* does not jump either. Therefore, when e_t jumps, P_t^N must jump to absorb the shock. It follows from Equation (18) and the time paths of e_t and π_t that the time path of $\ln P_t^N$ must look like as in Figure 10 or Figure 11. Since the up-jump at time T that implies a "boom" and the down-jump at time $2T$ that implies a "bust" are our main concern here, both cases are appropriate as the results of our analysis.[9]

(9) The negative inflation rate during the interval between T and $2T$ in the case where $\pi_t < 0 (T < t < 2T)$ might not look common, because negative inflation rates imply that the real interest rate is larger than the nominal interest rate. However, the negative inflation is not an unusual phenomenon. In fact, many cases of the negative inflation have been observed in recent years. For example, IMF (1999, pp.108-109) reports recent episodes of this negative inflation.

Figure 8: Nontradable goods inflation rate: the case where $\pi_s > 0 (T < s < 2T)$

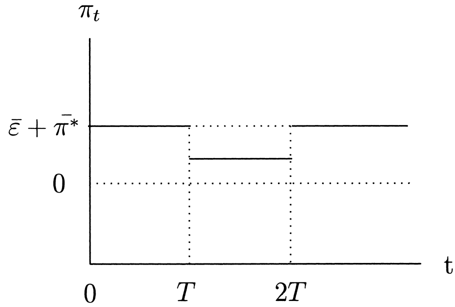


Figure 9: Nontradable goods inflation rate: the case where $\pi_s < 0 (T < s < 2T)$

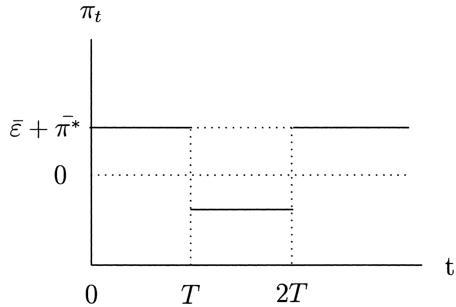


Figure 10: Nontradable goods price: the case where $\pi_s > 0 (T < s < 2T)$

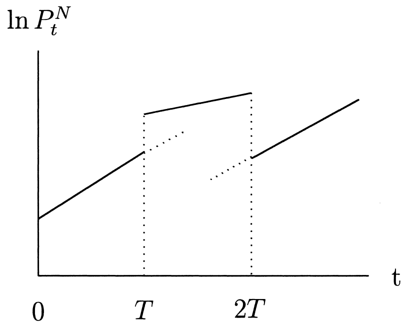
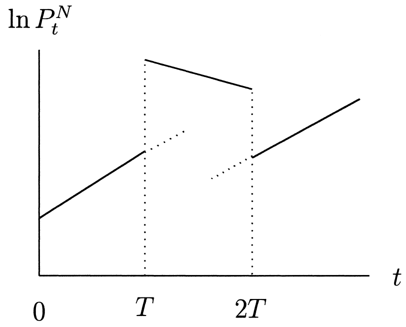


Figure 11: Nontradable goods price: the case where $\pi_s < 0\,(T < s < 2T)$



4 Flexible Exchange Rates

Under flexible exchange rates, the government sets an initial level of money supply M_0 and the growth rate of money supply $\mu(\equiv \frac{\dot{M}_t}{M_t})$.

The appendix A shows that under flexible exchange rates the nominal interest rate i_t follows the differential equation:

$$\dot{i}_t = \frac{1+\alpha i_t}{\alpha}(i_t - \mu - \beta). \tag{23}$$

It follows that

$$i_{ss} = \mu + \beta,$$

where i_{ss} is the steady state level of the nominal interest rate. The appendix A also shows that the differential equation of the nominal interest rate (23) is an unstable differential equation.

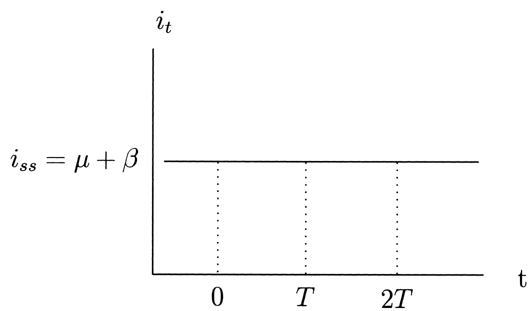
This unstability of the differential equation of the nominal interest rate is a key to know how i_t reacts to a shock of the world real interest rate under flexible exchange rates. It would be the first step to check whether i_t jumps at $t = T$ and $2T$ (or not).

It should be noted that $m_t\left(= \frac{M_t}{E_t P_t^*}\right)$ can not jump in an anticipated way under flexible exchange rates, since none of M_t, E_t, and P_t^* jump at $t = T$ and

$2T$. First of all, M_t does not jump under flexible exchange rates, because the government sets the initial level of money supply M_0 and the growth rate μ. As for E_t, if it jumped, there would be infinite arbitrage opportunities, which can not exist along a perfect foresight equilibrium path. Thus, E_t can not jump. Finally, P_t^* does not jump by assumption. Hence, m_t does not jump at $t = T$ and $2T$.

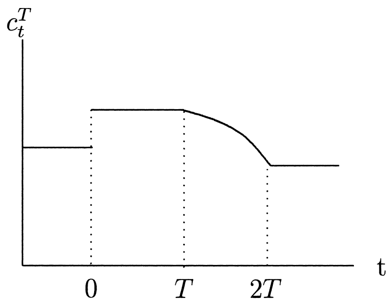
Since m_t does not jump at $t = T$ and $2T$, it follows from Equations (5) and (16) that c_t^T can not jump at $t = T$ and $2T$. From Equation (13) and the fact that λ_t does not jump in an anticipated way, i_t can not jump at $t = T$ and $2T$ either. This implies that i_t can not jump on impact at $t = 0$ either, because, if it did, it would diverge. Therefore, i_t remains at the steady state level $i_{ss}(= \mu + \beta)$ over time under flexible exchange rates (Figure 12). In other words, no real shock of the world real interest rate affects the time path of the nominal interest rate.

Figure 12: The nominal interest rate



Since the path of i_t is flat, Equations (13) and (17) yield the time path of tradables consumption (after time 0) as illustrated in Figure 13. There are no jumps of tradables consumption after time $t = 0$, which would occur under predetermined exchange rates. This is so because the effective price of the tradables consumption does not jump. Furthermore, taking into account the economy's resource constraint (11) and the assumption that $k_0 \leq 0$, we can know that consumption level between 0 and T must be higher than the initial steady state level. Hence, the time path of tradables consumption (including its initial steady state level before time 0) must look like as in illustrated in Figure 13.

Figure 13: Consumption of tradable goods



By Equation (16), this time path of tradables consumption yields that of the real exchange rate as illustrated in Figure 14. By Equation (10), the time path of tradables consumption also gives that of trade balance illustrated in Figure 15. By Equations (5) and (16), the time path of real money balances follows from that of tradables consumption as well (Figure 16).

Multiplying Equation (5) by $e_t\left(\equiv \frac{P_t}{P_t^N}\right)$ and using Equation (16) yield

$$\frac{M_t}{P_t^N} = 2\alpha y^N. \tag{24}$$

Then, differentiating Equation (24) with respect to time gives

$$\pi_t = \mu. \tag{25}$$

Figure 14: The real exchange rate

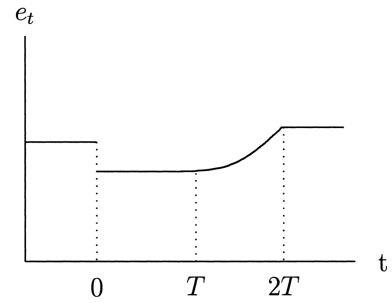


Figure 15: The trade balance

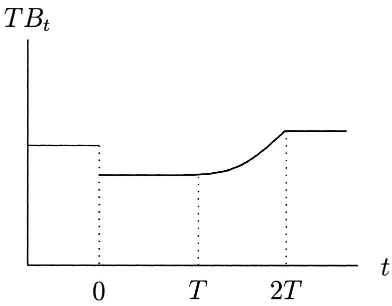
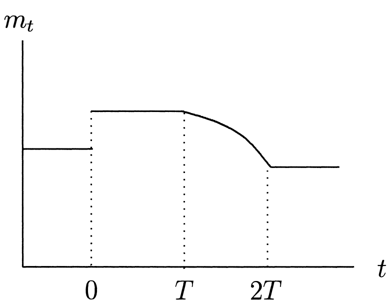
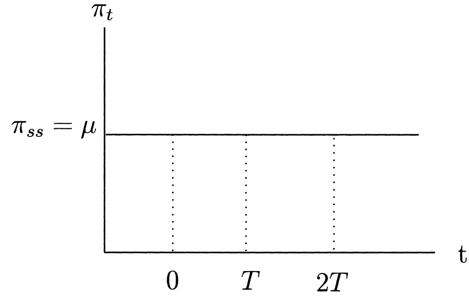


Figure 16: Real money balances



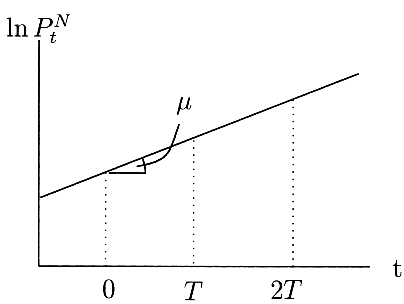
Since μ is set by the government (as a constant), π_t is constant over time as illustrated in Figure 17.

Figure 17: Nontradable goods inflation rate



Because it is already shown that $e_t\left(=\frac{P_t}{P_t^N}\right)$ does not jump along a perfect foresight equilibrium path (i.e., after time $t=0$) under flexible exchange rates, the price of non-tradable goods also can not jump after time $t=0$. In addition, since M_t does not jump under flexible exchange rates, it follows from Equation (24) that P_t^N can not jump at time $t=0$. Thus, the time path of the non-tradables price must look like as in Figure 18.

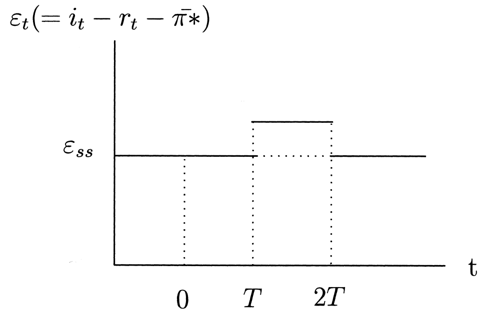
Figure 18: Nontradable goods price



Since the path of i_t is flat, it follows from Equation (4) that the depreciation rate of the nominal exchange rate must be high between T and $2T$ as illustrated in Figure 19.

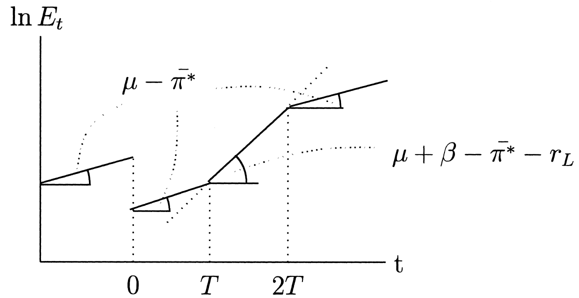
The nominal exchange rate jumps at time $t=0$ since e_t jumps but P_t^N and P_t does not jump at time $t=0$. It follows from the behavior of the depreciation rate that the time path of the nominal exchange rate must look like as in Figure 20.

Figure 19: Depreciation rate of the nominal exchange rate



$$\varepsilon_{ss} = i_{ss} - r_{ss} - \bar{\pi}*$$
$$= \mu - \bar{\pi}*$$

Figure 20: The nominal exchange rate



5 Conclusion

Section 3 has shown that the boom and bust in consumption, the real exchange rate appreciation, the trade balance deterioration, and the high inflation (as reflected in the jump of the price) are attributable to a temporary reduction in the world real interest rate under predetermined exchange rates.

These results imply that the low real interest rates prevailing in the US, Japan, and other advanced countries significantly contributed to the macroeconomic phenomena observed in emerging markets in East Asia and Latin America in the early 1990s.

Section 4 has shown that a temporary fall in the world real interest rate leads to the boom and bust in consumption, the real exchange rate appreciation, and the trade balance deterioration under flexible exchange rates as well as under predetermined exchange rates. In other words, a flexible exchange rate regime can not prevent the real external shock from affecting the domestic economy. However, in this case, a temporary fall in the world real interest rate does not cause inflationary pressures that would occur in the case of predetermined exchange rates.

The model has a clear theoretical implication that the real external shock has real effects under the flexible exchange rate regime as well as under the predetermined exchange rate regime. The monetary effect of the real shock under flexible exchange rates is different from that under predetermined exchange rates. No inflationary pressure occurs under flexible exchange rates, because the flexible exchange rates absorb the shock.

Appendix A

Differentiating m_t with respect to time gives

$$\frac{\dot{m}_t}{m_t} = \mu - (\varepsilon_t + \overline{\pi^*}).$$

It follows from the interest parity condition (4) that

$$\frac{\dot{m}_t}{m_t} = \mu - (i_t - r_t). \tag{26}$$

By (5) and (16), we have

$$m_t = 2\alpha c_t^T. \tag{27}$$

Thus, we obtain

$$\frac{\dot{m}_t}{m_t} = \frac{\dot{c}_t^T}{c_t^T}. \tag{28}$$

By (13), we also have

$$-\frac{\dot{c}_t^T}{c_t^T} = \frac{\dot{\lambda}_t}{\lambda_t} + \frac{\alpha}{1+\alpha i_t}\dot{i}_t. \tag{29}$$

Thus, from (15) and (28), we obtain

$$-\frac{\dot{m}_t}{m_t} = (\beta - r_t) + \frac{\alpha}{1+\alpha i_t}\dot{i}_t. \tag{30}$$

Substituting (26) into (30), we finally obtain Equation (23):

$$\dot{i}_t = \frac{1+\alpha i_t}{\alpha}(i_t - \mu - \beta).$$

In addition,

$$\frac{\partial \dot{i}_t}{\partial i_t}\Big|_{ss} = \frac{1+\alpha i_{ss}}{\alpha} > 0. \tag{31}$$

Hence, i_t follows an unstable differential equation.

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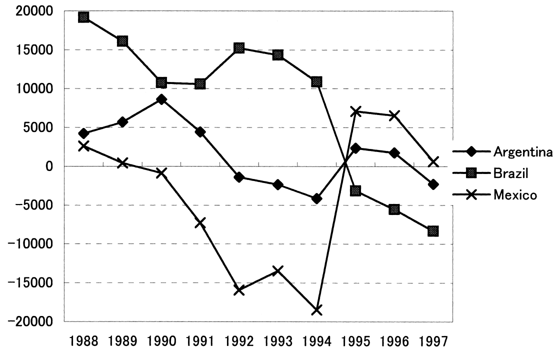
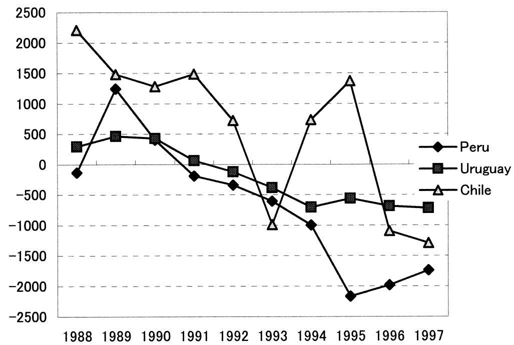
Figure A

The Trade Balance (Argentina, Brazil, Mexico)



The Trade Balance (Chile, Uruguay, Peru)



The Trade Balance (East Asian countries)

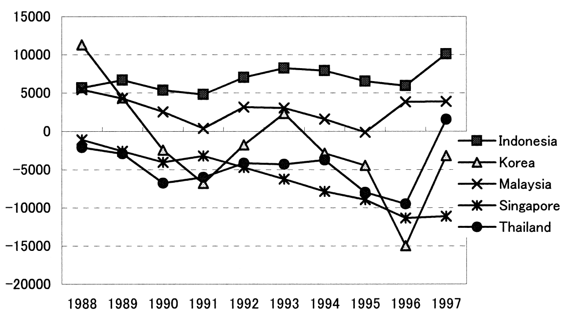
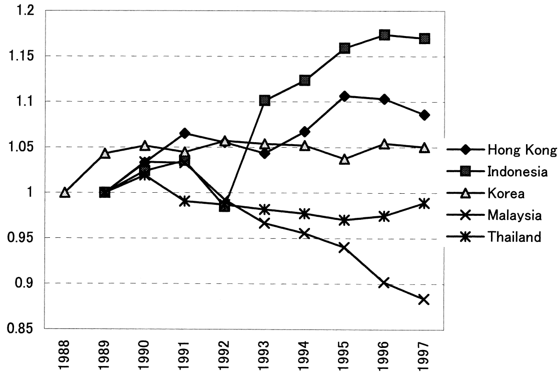


Figure B

Private Consumption / GDP (East Asian countries)



Private Consumption / GDP (Latin American countries)

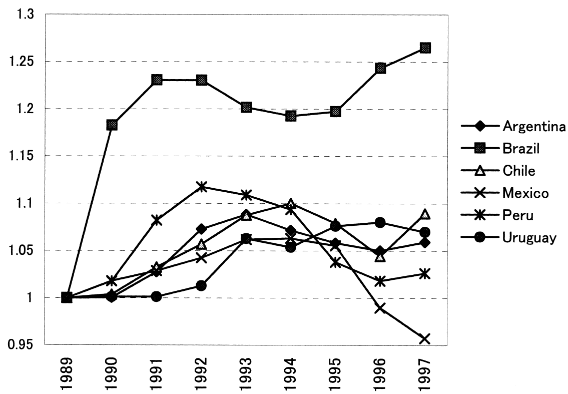
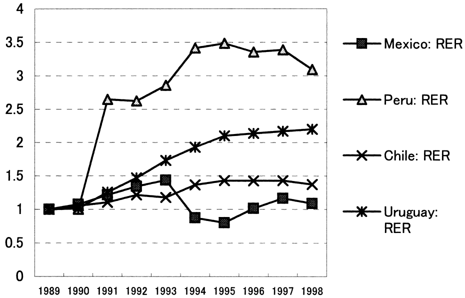


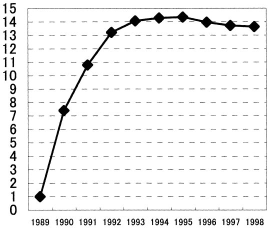
Figure C

The real exchange rate: Latin America



Date source: International Financial Statistics (RER vs US dollar), (The base year is 1989.)
An increase is an appreciation.

The real exchange rate: Argentina



Date source: International Financial Statistics (RER vs US dollar) (the base year is 1989.)
An increase is an appreciation.

The real exchange rate: East Asia

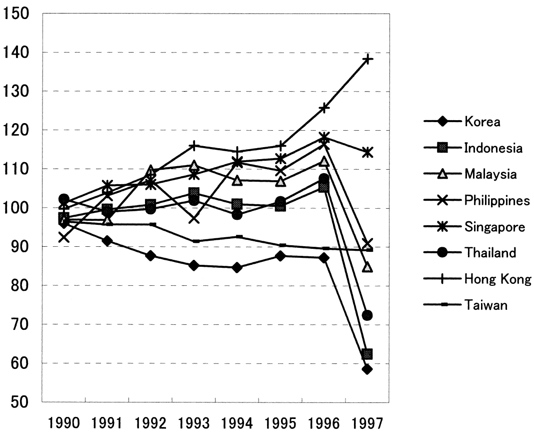
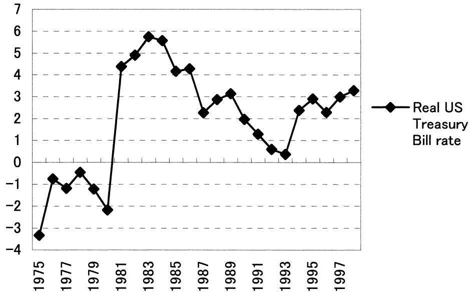


Figure D

Real US Treasury Bill rate



Real Interest Rate: Japan

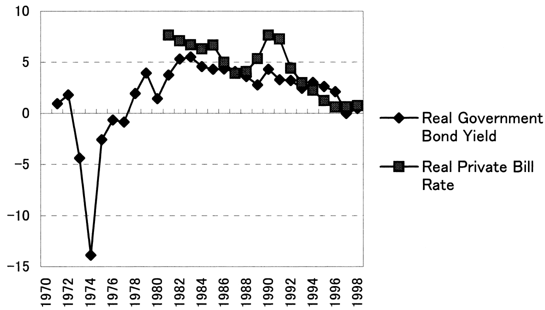
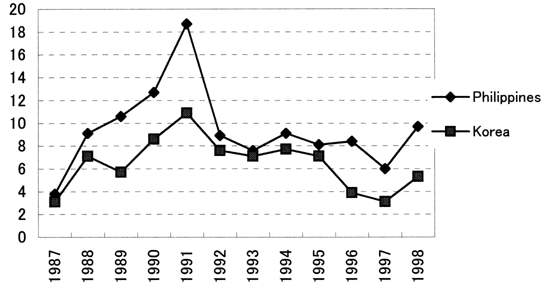
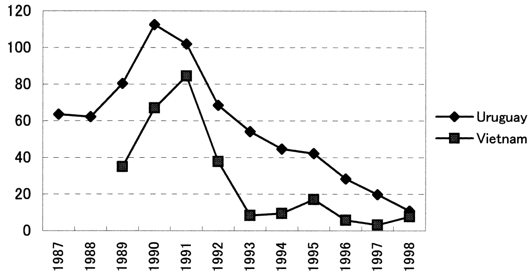


Figure E

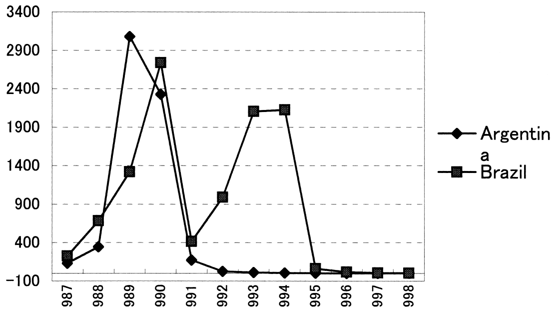
Inflation Rate(CPI) (Philippines, Korea)



Inflation Rate(CPI) (Uruguay, Vietnam)



Inflation Rate (CPI) (Argentina, Brazil)



Data Source: International Financial Statistics